Gravatt, Dan

From: Gravatt, Dan
Sent: Wednesday, May 29, 2013 8:33 AM
To: Tapia, Cecilia
Subject: FW: beta range

Distilling Chuck's discussion below, I'd use a conservative figure of 10 feet (3 meters) for beta range in air.

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Principles and integrity are expensive, but they are among the very few things worth having.

From: Hooper, Charles A.
Sent: Wednesday, May 29, 2013 8:31 AM
To: Gravatt, Dan
Subject: beta range

Well there is an equation but I'll spare you that. As you might guess higher energy beta travels farther than lower energy. Most betas are less than 1 MeV but generally a 1 MeV beta travels about 3 meters in air. A 700 keV beta travels about 2 meters in air. Now you have to realize that a beta listed at 1 MeV does not mean the average energy is 1 MeV, it means the max energy is 1 MeV, and the beta decay includes a neutrino. So the total beta and neutrino energy released is 1 MeV. The average energy of a 1 MeV beta is about 1/3 of its max, or 350 keV. So the average range of a 1 MeV (max) beta would be about 75 cm (2.4 feet).

And that does not make a good talking point.

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